

March 17, 1999

1072 '99 MAR 23 10:58

To: Dockets Management Branch, HFA-305

From: Vivian Gilliam, HFS-215

The information enclosed should be placed in the Docket No.96F-0145, FAP5B4472

Any additional information needed may be addressed to Vivian Gilliam at (202) 418-3167.

Sincerely,

Vivian Gilliam
Direct Additives Branch, HFS-215
Division of Petition Control
Center for Food Safety
and Applied Nutrition

Attn: Jennie Butler

96F-0145-

ENVIRONMENTAL IMPACTDock# 96 F-0145
/1. Date

January 7, 1999

2. Name of Petitioner

Albright & Wilson UK Limited.

3. Address

210-222 Hagley Road West
Oldbury, Warley
West Midlands, UK B68 ONN

4. Description of Proposed Action

Albright & Wilson UK Limited is requesting that FDA amend 21 CFR §176.300 by allowing for the use of the indirect food additive tetrakis (hydroxymethyl) phosphonium sulfate (THPS) as an antimicrobial agent to control slime in the manufacture of paper and paperboard that may contact food.

5. Categorical Exclusion

The proposed action qualifies for a categorical exclusion under 21 CFR § 25.32 (q) since the petitioned use for THPS, i.e. paper mill slimicide, is the same use currently registered by the U.S. Environmental Protection Agency (USEPA).

6. Product Labels

THPS will be marketed as either a 35% solution (trade names Tolcide® PS352C and Tolcide® PS355A) or a 20% solution (trade name Tolcide® PS200). The current FIFRA registration labels for these products are presented in Attachment 1. The amended labels that the petitioner will submit to the USEPA after FDA approval are presented in Attachment 2.

7. Extraordinary Circumstances

To the best of our knowledge, no extraordinary circumstances exist that preclude a categorical exclusion under 21 CFR §25.21(a) or 21 CFR §25.21(b) or 40 CFR §1508.27(b)(10).

Name: Eliot I. Harrison

Title: Agent for Albright & Wilson UK Limited

Signature: 

Date: January 7, 1999

ATTACHMENT 1

TOLCIDE® PS352C

INDUSTRIAL ANTIMICROBIAL

ACTIVE INGREDIENT:

Tetrakis(hydroxymethyl) phosphonium sulfate..... 35%

INERT INGREDIENTS:..... 65%**TOTAL:** 100%

EPA Reg. No. 33677-5

EPA Est. 550-TX-2

KEEP OUT OF REACH OF CHILDREN

DANGER

STATEMENT OF PRACTICAL TREATMENT**If in eyes:** Flush immediately with large amounts of clean, cool water for at least 15 minutes. Get medical attention immediately.**If swallowed:** Promptly drink large quantities of water. Do not induce vomiting. Avoid alcohol. Call a physician immediately.**If inhaled:** Remove victim to fresh air. If not breathing, give artificial respiration, preferably mouth to mouth. Get medical attention.**If on skin:** Wash with plenty of soap and water. Remove contaminated clothing and wash before reuse. Get medical attention.

Prolonged or frequent skin contact may cause allergic reactions in some individuals.

NOTE TO PHYSICIAN: Probable mucosal damage may contraindicate the use of gastric lavage.**PRECAUTIONARY STATEMENTS****HAZARD TO HUMANS AND DOMESTIC ANIMALS****DANGER:** Corrosive. Causes eye damage and skin irritation. Do not get in eyes, on skin or on clothing. Wear goggles or face shield and rubber gloves when handling. Harmful if inhaled. Avoid breathing vapor. Remove contaminated clothing and wash before reuse. Harmful or fatal if swallowed. Avoid contamination of food.**ENVIRONMENTAL HAZARDS**

This product is toxic to fish. Do not discharge effluent containing this product into lakes, streams, ponds, estuaries, oceans or other waters unless in accordance with the requirements of a National Pollutant Discharge Elimination System (NPDES) permit and the permitting authority has been notified in writing prior to discharge. Do not discharge effluent containing this product to sewer systems without previously notifying the local sewage treatment plant authority. For guidance, contact your State Water Board or Regional Office of the EPA.

STORAGE AND DISPOSAL

Do not contaminate water, food or feed by storage or disposal.

STORAGE: Store this product in a cool, dry area away from direct sunlight and heat to avoid deterioration. In case of a spill, flood the area with large quantities of water.**PESTICIDE DISPOSAL:** Pesticide wastes are acutely hazardous. Improper disposal of excess pesticide, spray mixture, or rinsate is a violation of Federal Law. If these wastes cannot be disposed of by use according to label instructions, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste representative at the nearest EPA Regional Office for guidance.**CONTAINER DISPOSAL:** Triple rinse (or equivalent) all containers and offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill or other procedures approved by state and local authorities.**Note:** Seller makes no warranty, expressed or implied, concerning the use of this product other than indicated on the label. Buyer assumes all risk and/or handling of this material, when such use and/or handling is contrary to label directions.

In case of emergency, call CHEMTREC at 1-800-424-9300

Manufactured by:

**ALBRIGHT
& WILSON**

ALBRIGHT & WILSON UK LIMITED

210-222 Hagley Road West • Oldbury, Warley • West Midlands • United Kingdom B68 0NN

Product of the United Kingdom
DIRECTIONS FOR USE

It is a violation of Federal Law to use this product in a manner inconsistent with its labeling.

PAPER MANUFACTURING (for control of bacteria, fungi and algae)

Not for use in manufacture of paper and paperboard products and adhesives that may come in contact with food.

Dosing: Additions should be made at a point in the system where mixing action is good, e.g. raw stock chest beater or mixing unit.

Add intermittently or continuously depending on mill conditions.

Intermittent Dosing: Add 70-1000 ppm of TOLCIDE PS352C based on total water volume or an equivalent based on dry weight of paper produced.

Continuous Dosing: Add 40-140 ppm of TOLCIDE PS352C based on total water volume or an equivalent based on dry weight of paper produced.

INDUSTRIAL AND/OR COMMERCIAL RECIRCULATING COOLING WATER SYSTEMS (for control of bacteria, fungi and algae)

Initial Slug Dose: Add 200-750 ppm of TOLCIDE PS352C based on total water volume. Repeat until control is obtained. Thereafter, add either Intermittently 75-300 ppm of TOLCIDE PS352C or Continuously 40-140 ppm of TOLCIDE PS352C per day.

Dirty systems must be cleaned prior to treatment.

HEAT TRANSFER SYSTEMS (Evaporative Condensers, Dairy Sweetwater Systems, Hydrostatic Sterilizers and Retorts, Brewery and Other Pasteurizers, and Warmers)

Add TOLCIDE PS352C at the same application rates, and in the same manner as described above. It should be added to the system at a point of uniform mixing such as a basin area, sump area, or other reservoir or collecting area from which the treated water will be circulated uniformly throughout the system.

SOLUTIONS / EMULSIONS

Not for use in manufacture of paper and paperboard products and adhesives that may come in contact with food. For the preservation of solutions, emulsions, adhesives and other aqueous liquid products, the addition of 0.05% to 0.5% of TOLCIDE PS352C is effective. Add at a point in the processing system where there will be sufficient time and agitation for good mixing and dispersion. The exact amount of TOLCIDE PS352C to be added for the preservation of given formulations will depend on the components as well as local storage time and requirements.

OIL FIELD OPERATIONS

TOLCIDE PS352C is effective in controlling sulfate reducing bacteria, general aerobic bacteria, processing and distribution applications and supporting systems; such as injection water, water holding tanks, disposal well water, recirculating water handling systems, and pipelines. TOLCIDE PS352C has been shown to dissolve iron sulfide and sequester iron when used under these conditions, leading to improved filter life and well injectivity, and reduction of hydrocarbon sheen. TOLCIDE PS352C is also effective for use in controlling microbial growth in fluids used for drilling and stimulation of oil wells.

Water Floods

Tolcide PS352C should be added to a water flood system at a point where uniform mixing will occur.

Initial Treatment: For a noticeably fouled system, add 200-750 ppm TOLCIDE PS352C. When added to a flowing system, slug dose for 2-6 hours based on flow rates. Repeat as necessary until control is achieved.

Subsequent Treatment: Once control has been achieved, add 30-210 ppm TOLCIDE PS352C weekly or as needed to maintain control. When added to a flowing system, slug dose for 2-6 hours based on flow rates.

Continuous Treatment: TOLCIDE PS352C can be dosed continuously at a level of 30-143 ppm.

Oil and Gas Pipelines

TOLCIDE PS352C should be added at a point in the pipeline where uniform mixing will occur.

Slug Dosing: Follow instructions for water flood treatment.

Continuous Dosing: TOLCIDE PS352C can be dosed continuously at a level of 30-215 ppm.

Drilling Muds, Packer Fluids, Completion and Workover Fluids

TOLCIDE PS352C should be added to these fluids at a point where uniform mixing will occur. Add 70-3000 ppm of TOLCIDE PS352C to a freshly prepared fluid depending on severity of contamination.

TOLCIDE® is a registered trademark of Albright & Wilson UK Limited.

31P-1298

NET CONTENTS: As Marked on Container

TOLCIDE® PS200

INDUSTRIAL ANTIMICROBIAL

ACTIVE INGREDIENT:

Tetrakis(hydroxymethyl) phosphonium sulfate..... 20%

INERT INGREDIENTS:..... 80%**TOTAL:**..... 100%

EPA Reg. No. 4564-15

EPA Est. 550-TX-2

KEEP OUT OF REACH OF CHILDREN DANGER

STATEMENT OF PRACTICAL TREATMENT

If in eyes: Flush immediately with large amounts of clean, cool water for at least 15 minutes. Get medical attention immediately.**If swallowed:** Promptly drink large quantities of water. Do not induce vomiting. Avoid alcohol. Call a physician immediately.**If inhaled:** Remove victim to fresh air. If not breathing, give artificial respiration, preferably mouth to mouth. Get medical attention.**If on skin:** Wash with plenty of soap and water. Remove contaminated clothing and wash before reuse. Get medical attention.

Prolonged or frequent skin contact may cause allergic reactions in some individuals.

NOTE TO PHYSICIAN: Probable mucosal damage may contraindicate the use of gastric lavage.

PRECAUTIONARY STATEMENTS HAZARD TO HUMANS AND DOMESTIC ANIMALS

DANGER: Corrosive. Causes eye damage and skin irritation. Do not get in eyes, on skin or on clothing. Wear goggles or face shield and rubber gloves when handling. Harmful if inhaled. Avoid breathing vapor. Remove contaminated clothing and wash before reuse. Harmful or fatal if swallowed. Avoid contamination of food.

ENVIRONMENTAL HAZARDS

This product is toxic to fish. Do not discharge effluent containing this product into lakes, streams, ponds, estuaries, oceans or other waters unless in accordance with the requirements of a National Pollutant Discharge Elimination System (NPDES) permit and the permitting authority has been notified in writing prior to discharge. Do not discharge effluent containing this product to sewer systems without previously notifying the local sewage treatment plant authority. For guidance, contact your State Water Board or Regional Office of the EPA.

STORAGE AND DISPOSAL

Do not contaminate water, food or feed by storage or disposal.

STORAGE: Store this product in a cool, dry area away from direct sunlight and heat to avoid deterioration. In case of a spill, flood the area with large quantities of water.**PESTICIDE DISPOSAL:** Pesticide wastes are acutely hazardous. Improper disposal of excess pesticide, spray mixture, or rinsate is a violation of Federal Law. If these wastes cannot be disposed of by use according to label instructions, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste representative at the nearest EPA Regional Office for guidance.**CONTAINER DISPOSAL:** Triple rinse (or equivalent) all containers and offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill or other procedures approved by state and local authorities.**Note:** Seller makes no warranty, expressed or implied, concerning the use of this product other than indicated on the label. Buyer assumes all risk and/or handling of this material, when such use and/or handling is contrary to label directions.

In case of emergency, call CHEMTREC at 1-800-424-9300

Manufactured for:

**ALBRIGHT
& WILSON**
Americas

P.O. BOX 4439 • Glen Allen, Virginia 23058-4439 • 804-968-6300

Product of the United Kingdom

DIRECTIONS FOR USE

It is a violation of Federal Law to use this product in a manner inconsistent with its labeling.

PAPER MANUFACTURING (for control of bacteria, fungi and algae)

Not for use in manufacture of paper and paperboard products and adhesives that may come in contact with food.

Dosing: Additions should be made at a point in the system where mixing action is good, e.g. raw stock chest beater or mixing unit.

Add intermittently or continuously depending on mill conditions.

Intermittent Dosing: Add 122.5-1750 ppm of TOLCIDE PS200 based on total water volume or an equivalent based on dry weight of paper produced.

Continuous Dosing: Add 70-245 ppm of TOLCIDE PS200 based on total water volume or an equivalent based on dry weight of paper produced.

INDUSTRIAL AND/OR COMMERCIAL RECIRCULATING COOLING WATER SYSTEMS (for control of bacteria, fungi and algae)

Initial Slug Dose: Add 350-1312.5 ppm of TOLCIDE PS200 based on total water volume. Repeat until control is obtained. Thereafter, add either

Intermittently 131.25-525 ppm of TOLCIDE PS200 or **Continuously** 70-245 ppm of TOLCIDE PS200 per day.

Dirty systems must be cleaned prior to treatment.

HEAT TRANSFER SYSTEMS (Evaporative Condensers, Dairy Sweetwater Systems, Hydrostatic Sterilizers and Retorts, Brewery and Other Pasteurizers, and Warmers)

Add TOLCIDE PS200 at the same application rates, and in the same manner as described above. It should be added to the system at a point of uniform mixing such as a basin area, sump area, or other reservoir or collecting area from which the treated water will be circulated uniformly throughout the system.

SOLUTIONS / EMULSIONS

Not for use in manufacture of paper and paperboard products and adhesives that may come in contact with food. For the preservation of solutions, emulsions, adhesives and other aqueous liquid products, the addition of 0.0875% to 0.875% of TOLCIDE PS200 is effective. Add at a point in the processing system where there will be sufficient time and agitation for good mixing and dispersion. The exact amount of TOLCIDE PS200 to be added for the preservation of given formulations will depend on the components as well as local storage time and requirements.

OIL FIELD OPERATIONS

TOLCIDE PS200 is effective in controlling sulfate reducing bacteria, general aerobic bacteria, processing and distribution applications and supporting systems; such as injection water, water holding tanks, disposal well water, recirculating water handling systems, and pipelines. TOLCIDE PS200 has been shown to dissolve iron sulfide and sequester iron when used under these conditions, leading to improved filter life and well injectivity, and reduction of hydrocarbon sheen. TOLCIDE PS200 is also effective for use in controlling microbial growth in fluids used for drilling and stimulation of oil wells.

Water Floods

Tolcide PS200 should be added to a water flood system at a point where uniform mixing will occur.

Initial Treatment: For a noticeably fouled system, add 350-1312.5 ppm TOLCIDE PS200. When added to a flowing system, slug dose for 2-6 hours based on flow rates. Repeat as necessary until control is achieved.

Subsequent Treatment: Once control has been achieved, add 52.5-367.5 ppm TOLCIDE PS200 weekly or as needed to maintain control. When added to a flowing system, slug dose for 2-6 hours based on flow rates.

Continuous Treatment: TOLCIDE PS200 can be dosed continuously at a level of 52.5-250 ppm.

Oil and Gas Pipelines

TOLCIDE PS200 should be added at a point in the pipeline where uniform mixing will occur.

Slug Dosing: Follow instructions for water flood treatment.

Continuous Dosing: TOLCIDE PS200 can be dosed continuously at a level of 52.5-376 ppm.

Drilling Muds, Packer Fluids, Completion and Workover Fluids

TOLCIDE PS200 should be added to these fluids at a point where uniform mixing will occur. Add 122.5-5250 ppm of TOLCIDE PS200 to a freshly prepared fluid depending on severity of contamination.

TOLCIDE® is a registered trademark of Albright & Wilson UK Limited.

34D-1298

NET CONTENTS: As Marked on Container

TOLCIDE® PS355A

INDUSTRIAL ANTIMICROBIAL

ACTIVE INGREDIENT:

Tetrakis(hydroxymethyl) phosphonium sulfate..... 35%

INERT INGREDIENTS:..... 65%**TOTAL:**..... 100%

EPA Reg. No. 33677-6

EPA Est. 550-TX-2

KEEP OUT OF REACH OF CHILDREN

DANGER

STATEMENT OF PRACTICAL TREATMENT**If in eyes:** Flush immediately with large amounts of clean, cool water for at least 15 minutes. Get medical attention immediately.**If swallowed:** Promptly drink large quantities of water. Do not induce vomiting. Avoid alcohol. Call a physician immediately.**If inhaled:** Remove victim to fresh air. If not breathing, give artificial respiration, preferably mouth to mouth. Get medical attention.**If on skin:** Wash with plenty of soap and water. Remove contaminated clothing and wash before reuse. Get medical attention.

Prolonged or frequent skin contact may cause allergic reactions in some individuals.

NOTE TO PHYSICIAN: Probable mucosal damage may contraindicate the use of gastric lavage.

PRECAUTIONARY STATEMENTS HAZARD TO HUMANS AND DOMESTIC ANIMALS

DANGER: Corrosive. Causes eye damage and skin irritation. Do not get in eyes, on skin or on clothing. Wear goggles or face shield and rubber gloves when handling. Harmful if inhaled. Avoid breathing vapor. Remove contaminated clothing and wash before reuse. Harmful or fatal if swallowed. Avoid contamination of food.

ENVIRONMENTAL HAZARDS

This product is toxic to fish. Do not discharge effluent containing this product into lakes, streams, ponds, estuaries, oceans or other waters unless in accordance with the requirements of a National Pollutant Discharge Elimination System (NPDES) permit and the permitting authority has been notified in writing prior to discharge. Do not discharge effluent containing this product to sewer systems without previously notifying the local sewage treatment plant authority. For guidance, contact your State Water Board or Regional Office of the EPA.

STORAGE AND DISPOSAL

Do not contaminate water, food or feed by storage or disposal.

STORAGE: Store this product in a cool, dry area away from direct sunlight and heat to avoid deterioration. In case of a spill, flood the area with large quantities of water.**PESTICIDE DISPOSAL:** Pesticide wastes are acutely hazardous. Improper disposal of excess pesticide, spray mixture, or rinsate is a violation of Federal Law. If these wastes cannot be disposed of by use according to label instructions, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste representative at the nearest EPA Regional Office for guidance.**CONTAINER DISPOSAL:** Triple rinse (or equivalent) all containers and offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill or other procedures approved by state and local authorities.**Note:** Seller makes no warranty, expressed or implied, concerning the use of this product other than indicated on the label. Buyer assumes all risk and/or handling of this material, when such use and/or handling is contrary to label directions.

In case of emergency, call CHEMTREC at 1-800-424-9300

Manufactured by:

**ALBRIGHT
& WILSON**

ALBRIGHT & WILSON UK LIMITED

210-222 Hagley Road West • Oldbury, Warley • West Midlands • United Kingdom B68 0NN

Product of the United Kingdom

DIRECTIONS FOR USE

It is a violation of Federal Law to use this product in a manner inconsistent with its labeling.

PAPER MANUFACTURING (for control of bacteria, fungi and algae)

Not for use in manufacture of paper and paperboard products and adhesives that may come in contact with food.

Dosing: Additions should be made at a point in the system where mixing action is good, e.g. raw stock chest beater or mixing unit.

Add intermittently or continuously depending on mill conditions.

Intermittent Dosing: Add 70-1000 ppm of TOLCIDE PS355A based on total water volume or an equivalent based on dry weight of paper produced.

Continuous Dosing: Add 40-140 ppm of TOLCIDE PS355A based on total water volume or an equivalent based on dry weight of paper produced.

INDUSTRIAL AND/OR COMMERCIAL RECIRCULATING COOLING WATER SYSTEMS (for control of bacteria, fungi and algae)

Initial Slug Dose: Add 200-750 ppm of TOLCIDE PS355A based on total water volume. Repeat until control is obtained. Thereafter, add either Intermittently 75-300 ppm of TOLCIDE PS355A or Continuously 40-140 ppm of TOLCIDE PS355A per day.

Dirty systems must be cleaned prior to treatment.

HEAT TRANSFER SYSTEMS (Evaporative Condensers, Dairy Sweetwater Systems, Hydrostatic Sterilizers and Retorts, Brewery and Other Pasteurizers, and Warmers)

Add TOLCIDE PS355A at the same application rates, and in the same manner as described above. It should be added to the system at a point of uniform mixing such as a basin area, sump area, or other reservoir or collecting area from which the treated water will be circulated uniformly throughout the system.

AIR WASHER SYSTEMS

For control of bacteria and fungi. Pre-clean the system with detergent and allow air washer to run with fan on for two hours. Flush and check nozzles, manually cleaning as necessary. Add 75-200 ppm of TOLCIDE PS355A at a point where uniform mixing and even distribution will occur. Repeat as needed to maintain control.

SOLUTIONS / EMULSIONS

Not for use in manufacture of paper and paperboard products and adhesives that may come in contact with food. For the preservation of solutions, emulsions, adhesives and other aqueous liquid products, the addition of 0.05% to 0.5% of TOLCIDE PS355A is effective. Add at a point in the processing system where there will be sufficient time and agitation for good mixing and dispersion. The exact amount of TOLCIDE PS355A to be added for the preservation of given formulations will depend on the components as well as local storage time and requirements.

OIL FIELD OPERATIONS

TOLCIDE PS355A is effective in controlling sulfate reducing bacteria, general aerobic bacteria, processing and distribution applications and supporting systems; such as injection water, water holding tanks, disposal well water, recirculating water handling systems, and pipelines. TOLCIDE PS355A has been shown to dissolve iron sulfide and sequester iron when used under these conditions, leading to improved filter life and well injectivity, and reduction of hydrocarbon sheen. TOLCIDE PS355A is also effective for use in controlling microbial growth in fluids used for drilling and stimulation of oil wells.

Water Floods

Tolcide PS355A should be added to a water flood system at a point where uniform mixing will occur.

Initial Treatment: For a noticeably fouled system, add 200-750 ppm TOLCIDE PS355A. When added to a flowing system, slug dose for 2-6 hours based on flow rates. Repeat as necessary until control is achieved.

Subsequent Treatment: Once control has been achieved, add 30-210 ppm TOLCIDE PS355A weekly or as needed to maintain control. When added to a flowing system, slug dose for 2-6 hours based on flow rates.

Continuous Treatment: TOLCIDE PS355A can be dosed continuously at a level of 30-143 ppm.

Oil and Gas Pipelines

TOLCIDE PS355A should be added at a point in the pipeline where uniform mixing will occur.

Slug Dosing: Follow instructions for water flood treatment.

Continuous Dosing: TOLCIDE PS355A can be dosed continuously at a level of 30-215 ppm.

Drilling Muds, Packer Fluids, Completion and Workover Fluids

TOLCIDE PS355A should be added to these fluids at a point where uniform mixing will occur. Add 70-3000 ppm of TOLCIDE PS355A to a freshly prepared fluid depending on severity of contamination.

TOLCIDE® is a registered trademark of Albright & Wilson UK Limited.

30F-1298

NET CONTENTS: As Marked on Container

ATTACHMENT 2

TOLCIDE® PS352C

INDUSTRIAL ANTIMICROBIAL

ACTIVE INGREDIENT:

Tetrakis(hydroxymethyl) phosphonium sulfate..... 35%

INERT INGREDIENTS:..... 65%**TOTAL:**..... 100%

EPA Reg. No. 33677-5

EPA Est. 550-TX-2

KEEP OUT OF REACH OF CHILDREN DANGER

STATEMENT OF PRACTICAL TREATMENT

If in eyes: Flush immediately with large amounts of clean, cool water for at least 15 minutes. Get medical attention immediately.**If swallowed:** Promptly drink large quantities of water. Do not induce vomiting. Avoid alcohol. Call a physician immediately.**If inhaled:** Remove victim to fresh air. If not breathing, give artificial respiration, preferably mouth to mouth. Get medical attention.**If on skin:** Wash with plenty of soap and water. Remove contaminated clothing and wash before reuse. Get medical attention.

Prolonged or frequent skin contact may cause allergic reactions in some individuals.

NOTE TO PHYSICIAN: Probable mucosal damage may contraindicate the use of gastric lavage.

PRECAUTIONARY STATEMENTS HAZARD TO HUMANS AND DOMESTIC ANIMALS

DANGER: Corrosive. Causes eye damage and skin irritation. Do not get in eyes, on skin or on clothing. Wear goggles or face shield and rubber gloves when handling. Harmful if inhaled. Avoid breathing vapor. Remove contaminated clothing and wash before reuse. Harmful or fatal if swallowed. Avoid contamination of food.

ENVIRONMENTAL HAZARDS

This product is toxic to fish. Do not discharge effluent containing this product into lakes, streams, ponds, estuaries, oceans or other waters unless in accordance with the requirements of a National Pollutant Discharge Elimination System (NPDES) permit and the permitting authority has been notified in writing prior to discharge. Do not discharge effluent containing this product to sewer systems without previously notifying the local sewage treatment plant authority. For guidance, contact your State Water Board or Regional Office of the EPA.

STORAGE AND DISPOSAL

Do not contaminate water, food or feed by storage or disposal.

STORAGE: Store this product in a cool, dry area away from direct sunlight and heat to avoid deterioration. In case of a spill, flood the area with large quantities of water.**PESTICIDE DISPOSAL:** Pesticide wastes are acutely hazardous. Improper disposal of excess pesticide, spray mixture, or rinsate is a violation of Federal Law. If these wastes cannot be disposed of by use according to label instructions, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste representative at the nearest EPA Regional Office for guidance.**CONTAINER DISPOSAL:** Triple rinse (or equivalent) all containers and offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill or other procedures approved by state and local authorities.**Note:** Seller makes no warranty, expressed or implied, concerning the use of this product other than indicated on the label. Buyer assumes all risk and/or handling of this material, when such use and/or handling is contrary to label directions.

In case of emergency, call CHEMTREC at 1-800-424-9300

Manufactured by:

**ALBRIGHT
& WILSON**

ALBRIGHT & WILSON UK LIMITED

210-222 Hagley Road West • Oldbury, Warley • West Midlands • United Kingdom B68 0NN

Product of the United Kingdom

DIRECTIONS FOR USE

It is a violation of Federal Law to use this product in a manner inconsistent with its labeling.

PAPER MANUFACTURING (for control of bacteria, fungi and algae)

a) For use in the manufacture of paper and paperboard products and adhesives that do not contact food.

Dosing: Additions should be made at a point in the system where mixing action is good, e.g. raw stock chest beater or mixing unit.

Add intermittently or continuously depending on mill conditions.

Intermittent Dosing: Add 70-1000 ppm of TOLCIDE PS352C based on total water volume or an equivalent based on dry weight of paper produced.

Continuous Dosing: Add 40-140 ppm of TOLCIDE PS352C based on total water volume or an equivalent based on dry weight of paper produced.

b) For use in the manufacture of paper and paperboard products that may contact food.

Dosing: Additions should be made at a point in the system where mixing action is good, e.g. raw stock chest beater or mixing unit.

Add intermittently or continuously depending on mill conditions.

Intermittent Dosing: Add 70-240 ppm of TOLCIDE PS352C based on total water volume or an equivalent based on dry weight of paper produced.

Continuous Dosing: Add 40-140 ppm of TOLCIDE PS352C based on total water volume or an equivalent based on dry weight of paper produced.

INDUSTRIAL AND/OR COMMERCIAL RECIRCULATING COOLING WATER SYSTEMS (for control of bacteria, fungi and algae)

Initial Slug Dose: Add 200-750 ppm of TOLCIDE PS352C based on total water volume. Repeat until control is obtained. Thereafter, add either Intermittently 75-300 ppm of TOLCIDE PS352C or Continuously 40-140 ppm of TOLCIDE PS352C per day.

Dirty systems must be cleaned prior to treatment.

HEAT TRANSFER SYSTEMS (Evaporative Condensers, Dairy Sweetwater Systems, Hydrostatic Sterilizers and Retorts, Brewery and Other Pasteurizers, and Warmers)

Add TOLCIDE PS352C at the same application rates, and in the same manner as described above. It should be added to the system at a point of uniform mixing such as a basin area, sump area, or other reservoir or collecting area from which the treated water will be circulated uniformly throughout the system.

SOLUTIONS / EMULSIONS

Not for use in manufacture of paper and paperboard products and adhesives that may come in contact with food. For the preservation of solutions, emulsions, adhesives and other aqueous liquid products, the addition of 0.05% to 0.5% of TOLCIDE PS352C is effective. Add at a point in the processing system where there will be sufficient time and agitation for good mixing and dispersion. The exact amount of TOLCIDE PS352C to be added for the preservation of given formulations will depend on the components as well as local storage time and requirements.

OIL FIELD OPERATIONS

TOLCIDE PS352C is effective in controlling sulfate reducing bacteria, general aerobic bacteria, processing and distribution applications and supporting systems; such as injection water, water holding tanks, disposal well water, recirculating water handling systems, and pipelines. TOLCIDE PS352C has been shown to dissolve iron sulfide and sequester iron when used under these conditions, leading to improved filter life and well injectivity, and reduction of hydrocarbon sheen. TOLCIDE PS352C is also effective for use in controlling microbial growth in fluids used for drilling and stimulation of oil wells.

Water Floods

Tolcide PS352C should be added to a water flood system at a point where uniform mixing will occur.

Initial Treatment: For a noticeably fouled system, add 200-750 ppm TOLCIDE PS352C. When added to a flowing system, slug dose for 2-6 hours based on flow rates. Repeat as necessary until control is achieved.

Subsequent Treatment: Once control has been achieved, add 30-210 ppm TOLCIDE PS352C weekly or as needed to maintain control. When added to a flowing system, slug dose for 2-6 hours based on flow rates.

Continuous Treatment: TOLCIDE PS352C can be dosed continuously at a level of 30-143 ppm.

Oil and Gas Pipelines

TOLCIDE PS352C should be added at a point in the pipeline where uniform mixing will occur.

Slug Dosing: Follow instructions for water flood treatment.

Continuous Dosing: TOLCIDE PS352C can be dosed continuously at a level of 30-215 ppm.

Drilling Muds, Packer Fluids, Completion and Workover Fluids

TOLCIDE PS352C should be added to these fluids at a point where uniform mixing will occur. Add 70-3000 ppm of TOLCIDE PS352C to a freshly prepared fluid depending on severity of contamination.

TOLCIDE® is a registered trademark of Albright & Wilson UK Limited.

31P-1298

NET CONTENTS: As Marked on Container

TOLCIDE® PS355A

INDUSTRIAL ANTIMICROBIAL

ACTIVE INGREDIENT:

Tetrakis(hydroxymethyl) phosphonium sulfate..... 35%

INERT INGREDIENTS:..... 65%**TOTAL:** 100%

EPA Reg. No. 33677-6

EPA Est. 550-TX-2

KEEP OUT OF REACH OF CHILDREN DANGER

STATEMENT OF PRACTICAL TREATMENT

If in eyes: Flush immediately with large amounts of clean, cool water for at least 15 minutes. Get medical attention immediately.**If swallowed:** Promptly drink large quantities of water. Do not induce vomiting. Avoid alcohol. Call a physician immediately.**If inhaled:** Remove victim to fresh air. If not breathing, give artificial respiration, preferably mouth to mouth. Get medical attention.**If on skin:** Wash with plenty of soap and water. Remove contaminated clothing and wash before reuse. Get medical attention.

Prolonged or frequent skin contact may cause allergic reactions in some individuals.

NOTE TO PHYSICIAN: Probable mucosal damage may contraindicate the use of gastric lavage.

PRECAUTIONARY STATEMENTS HAZARD TO HUMANS AND DOMESTIC ANIMALS

DANGER: Corrosive. Causes eye damage and skin irritation. Do not get in eyes, on skin or on clothing. Wear goggles or face shield and rubber gloves when handling. Harmful if inhaled. Avoid breathing vapor. Remove contaminated clothing and wash before reuse. Harmful or fatal if swallowed. Avoid contamination of food.

ENVIRONMENTAL HAZARDS

This product is toxic to fish. Do not discharge effluent containing this product into lakes, streams, ponds, estuaries, oceans or other waters unless in accordance with the requirements of a National Pollutant Discharge Elimination System (NPDES) permit and the permitting authority has been notified in writing prior to discharge. Do not discharge effluent containing this product to sewer systems without previously notifying the local sewage treatment plant authority. For guidance, contact your State Water Board or Regional Office of the EPA.

STORAGE AND DISPOSAL

Do not contaminate water, food or feed by storage or disposal.

STORAGE: Store this product in a cool, dry area away from direct sunlight and heat to avoid deterioration. In case of a spill, flood the area with large quantities of water.**PESTICIDE DISPOSAL:** Pesticide wastes are acutely hazardous. Improper disposal of excess pesticide, spray mixture, or rinsate is a violation of Federal Law. If these wastes cannot be disposed of by use according to label instructions, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste representative at the nearest EPA Regional Office for guidance.**CONTAINER DISPOSAL:** Triple rinse (or equivalent) all containers and offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill or other procedures approved by state and local authorities.**Note:** Seller makes no warranty, expressed or implied, concerning the use of this product other than indicated on the label. Buyer assumes all risk and/or handling of this material, when such use and/or handling is contrary to label directions.

In case of emergency, call CHEMTREC at 1-800-424-9300

Manufactured by:

**ALBRIGHT
& WILSON**

ALBRIGHT & WILSON UK LIMITED

210-222 Hagley Road West • Oldbury, Warley • West Midlands • United Kingdom B68 0NN

Product of the United Kingdom

DIRECTIONS FOR USE

It is a violation of Federal Law to use this product in a manner inconsistent with its labeling.

PAPER MANUFACTURING (for control of bacteria, fungi and algae)

a) For use in the manufacture of paper and paperboard products and adhesives that do not contact food.

Dosing: Additions should be made at a point in the system where mixing action is good, e.g. raw stock chest beater or mixing unit.

Add intermittently or continuously depending on mill conditions.

Intermittent Dosing: Add 70-1000 ppm of TOLCIDE PS355A based on total water volume or an equivalent based on dry weight of paper produced.

Continuous Dosing: Add 40-140 ppm of TOLCIDE PS355A based on total water volume or an equivalent based on dry weight of paper produced.

b) For use in the manufacture of paper and paperboard products that may contact food.

Dosing: Additions should be made at a point in the system where mixing action is good, e.g. raw stock chest beater or mixing unit.

Add intermittently or continuously depending on mill conditions.

Intermittent Dosing: Add 70-240 ppm of TOLCIDE PS355A based on total water volume or an equivalent based on dry weight of paper produced.

Continuous Dosing: Add 40-140 ppm of TOLCIDE PS355A based on total water volume or an equivalent based on dry weight of paper produced.

INDUSTRIAL AND/OR COMMERCIAL RECIRCULATING COOLING WATER SYSTEMS (for control of bacteria, fungi and algae)

Initial Slug Dose: Add 200-750 ppm of TOLCIDE PS355A based on total water volume. Repeat until control is obtained. Thereafter, add either Intermittently 75-300 ppm of TOLCIDE PS355A or Continuously 40-140 ppm of TOLCIDE PS355A per day.

Dirty systems must be cleaned prior to treatment.

HEAT TRANSFER SYSTEMS (Evaporative Condensers, Dairy Sweetwater Systems, Hydrostatic Sterilizers and Retorts, Brewery and Other Pasteurizers, and Warmers)

Add TOLCIDE PS355A at the same application rates, and in the same manner as described above. It should be added to the system at a point of uniform mixing such as a basin area, sump area, or other reservoir or collecting area from which the treated water will be circulated uniformly throughout the system.

SOLUTIONS / EMULSIONS

Not for use in manufacture of paper and paperboard products and adhesives that may come in contact with food. For the preservation of solutions, emulsions, adhesives and other aqueous liquid products, the addition of 0.05% to 0.5% of TOLCIDE PS355A is effective. Add at a point in the processing system where there will be sufficient time and agitation for good mixing and dispersion. The exact amount of TOLCIDE PS355A to be added for the preservation of given formulations will depend on the components as well as local storage time and requirements.

OIL FIELD OPERATIONS

TOLCIDE PS355A is effective in controlling sulfate reducing bacteria, general aerobic bacteria, processing and distribution applications and supporting systems; such as injection water, water holding tanks, disposal well water, recirculating water handling systems, and pipelines. TOLCIDE PS355A has been shown to dissolve iron sulfide and sequester iron when used under these conditions, leading to improved filter life and well injectivity, and reduction of hydrocarbon sheen. TOLCIDE PS355A is also effective for use in controlling microbial growth in fluids used for drilling and stimulation of oil wells.

Water Floods

Tolcide PS355A should be added to a water flood system at a point where uniform mixing will occur.

Initial Treatment: For a noticeably fouled system, add 200-750 ppm TOLCIDE PS355A. When added to a flowing system, slug dose for 2-6 hours based on flow rates. Repeat as necessary until control is achieved.

Subsequent Treatment: Once control has been achieved, add 30-210 ppm TOLCIDE PS355A weekly or as needed to maintain control. When added to a flowing system, slug dose for 2-6 hours based on flow rates.

Continuous Treatment: TOLCIDE PS355A can be dosed continuously at a level of 30-143 ppm.

Oil and Gas Pipelines

TOLCIDE PS355A should be added at a point in the pipeline where uniform mixing will occur.

Slug Dosing: Follow instructions for water flood treatment.

Continuous Dosing: TOLCIDE PS355A can be dosed continuously at a level of 30-215 ppm.

Drilling Muds, Packer Fluids, Completion and Workover Fluids

TOLCIDE PS355A should be added to these fluids at a point where uniform mixing will occur. Add 70-3000 ppm of TOLCIDE PS355A to a freshly prepared fluid depending on severity of contamination.

TOLCIDE® is a registered trademark of Albright & Wilson UK Limited.

30F-1298

NET CONTENTS: As Marked on Container

TOLCIDE® PS200

INDUSTRIAL ANTIMICROBIAL

ACTIVE INGREDIENT:

Tetrakis(hydroxymethyl) phosphonium sulfate..... 20%

INERT INGREDIENTS:..... 80%**TOTAL:**..... 100%

EPA Reg. No. 4564-15

EPA Est. 550-TX-2

KEEP OUT OF REACH OF CHILDREN DANGER

STATEMENT OF PRACTICAL TREATMENT

If in eyes: Flush immediately with large amounts of clean, cool water for at least 15 minutes. Get medical attention immediately.**If swallowed:** Promptly drink large quantities of water. Do not induce vomiting. Avoid alcohol. Call a physician immediately.**If inhaled:** Remove victim to fresh air. If not breathing, give artificial respiration, preferably mouth to mouth. Get medical attention.**If on skin:** Wash with plenty of soap and water. Remove contaminated clothing and wash before reuse. Get medical attention.

Prolonged or frequent skin contact may cause allergic reactions in some individuals.

NOTE TO PHYSICIAN: Probable mucosal damage may contraindicate the use of gastric lavage.

PRECAUTIONARY STATEMENTS HAZARD TO HUMANS AND DOMESTIC ANIMALS

DANGER: Corrosive. Causes eye damage and skin irritation. Do not get in eyes, on skin or on clothing. Wear goggles or face shield and rubber gloves when handling. Harmful if inhaled. Avoid breathing vapor. Remove contaminated clothing and wash before reuse. Harmful or fatal if swallowed. Avoid contamination of food.

ENVIRONMENTAL HAZARDS

This product is toxic to fish. Do not discharge effluent containing this product into lakes, streams, ponds, estuaries, oceans or other waters unless in accordance with the requirements of a National Pollutant Discharge Elimination System (NPDES) permit and the permitting authority has been notified in writing prior to discharge. Do not discharge effluent containing this product to sewer systems without previously notifying the local sewage treatment plant authority. For guidance, contact your State Water Board or Regional Office of the EPA.

STORAGE AND DISPOSAL

Do not contaminate water, food or feed by storage or disposal.

STORAGE: Store this product in a cool, dry area away from direct sunlight and heat to avoid deterioration. In case of a spill, flood the area with large quantities of water.**PESTICIDE DISPOSAL:** Pesticide wastes are acutely hazardous. Improper disposal of excess pesticide, spray mixture, or rinsate is a violation of Federal Law. If these wastes cannot be disposed of by use according to label instructions, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste representative at the nearest EPA Regional Office for guidance.**CONTAINER DISPOSAL:** Triple rinse (or equivalent) all containers and offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill or other procedures approved by state and local authorities.**Note:** Seller makes no warranty, expressed or implied, concerning the use of this product other than indicated on the label. Buyer assumes all risk and/or handling of this material, when such use and/or handling is contrary to label directions.

In case of emergency, call CHEMTREC at 1-800-424-9300

Manufactured for:

**ALBRIGHT
& WILSON**
Americas

P.O. BOX 4439 • Glen Allen, Virginia 23058-4439 • 804-968-6300

Product of the United Kingdom

DIRECTIONS FOR USE

It is a violation of Federal Law to use this product in a manner inconsistent with its labeling.

PAPER MANUFACTURING (for control of bacteria, fungi and algae)

a) For use in the manufacture of paper and paperboard products and adhesives that does not contact food.

Dosing: Additions should be made at a point in the system where mixing action is good, e.g. raw stock chest beater or mixing unit.

Add intermittently or continuously depending on mill conditions.

Intermittent Dosing: Add 122.5-1750 ppm of TOLCIDE PS200 based on total water volume or an equivalent based on dry weight of paper produced.

Continuous Dosing: Add 70-245 ppm of TOLCIDE PS200 based on total water volume or an equivalent based on dry weight of paper produced.

b) For use in the manufacture of paper and paperboard products that may contact food.

Dosing: Additions should be made at a point in the system where mixing action is good, e.g. raw stock chest beater or mixing unit.

Add intermittently or continuously depending on mill conditions.

Intermittent Dosing: Add 122.5-420 ppm of TOLCIDE PS200 based on total water volume or an equivalent based on dry weight of paper produced.

Continuous Dosing: Add 70-245 ppm of TOLCIDE PS200 based on total water volume or an equivalent based on dry weight of paper produced.

INDUSTRIAL AND/OR COMMERCIAL RECIRCULATING COOLING WATER SYSTEMS (for control of bacteria, fungi and algae)

Initial Slug Dose: Add 350-1312.5 ppm of TOLCIDE PS200 based on total water volume. Repeat until control is obtained. Thereafter, add either

Intermittently 131.25-525 ppm of TOLCIDE PS200 or **Continuously** 70-245 ppm of TOLCIDE PS200 per day.

Dirty systems must be cleaned prior to treatment.

HEAT TRANSFER SYSTEMS (Evaporative Condensers, Dairy Sweetwater Systems, Hydrostatic Sterilizers and Retorts, Brewery and Other Pasteurizers, and Warmers)

Add TOLCIDE PS200 at the same application rates, and in the same manner as described above. It should be added to the system at a point of uniform mixing such as a basin area, sump area, or other reservoir or collecting area from which the treated water will be circulated uniformly throughout the system.

SOLUTIONS / EMULSIONS

Not for use in manufacture of paper and paperboard products and adhesives that may come in contact with food. For the preservation of solutions, emulsions, adhesives and other aqueous liquid products, the addition of 0.0875% to 0.875% of TOLCIDE PS200 is effective. Add at a point in the processing system where there will be sufficient time and agitation for good mixing and dispersion. The exact amount of TOLCIDE PS200 to be added for the preservation of given formulations will depend on the components as well as local storage time and requirements.

OIL FIELD OPERATIONS

TOLCIDE PS200 is effective in controlling sulfate reducing bacteria, general aerobic bacteria, processing and distribution applications and supporting systems; such as injection water, water holding tanks, disposal well water, recirculating water handling systems, and pipelines. TOLCIDE PS200 has been shown to dissolve iron sulfide and sequester iron when used under these conditions, leading to improved filter life and well injectivity, and reduction of hydrocarbon sheen. TOLCIDE PS200 is also effective for use in controlling microbial growth in fluids used for drilling and stimulation of oil wells.

Water Floods

Tolcide PS200 should be added to a water flood system at a point where uniform mixing will occur.

Initial Treatment: For a noticeably fouled system, add 350-1312.5 ppm TOLCIDE PS200. When added to a flowing system, slug dose for 2-6 hours based on flow rates. Repeat as necessary until control is achieved.

Subsequent Treatment: Once control has been achieved, add 52.5-367.5 ppm TOLCIDE PS200 weekly or as needed to maintain control. When added to a flowing system, slug dose for 2-6 hours based on flow rates.

Continuous Treatment: TOLCIDE PS200 can be dosed continuously at a level of 52.5-250 ppm.

Oil and Gas Pipelines

TOLCIDE PS200 should be added at a point in the pipeline where uniform mixing will occur.

Slug Dosing: Follow instructions for water flood treatment.

Continuous Dosing: TOLCIDE PS200 can be dosed continuously at a level of 52.5-376 ppm.

Drilling Muds, Packer Fluids, Completion and Workover Fluids

TOLCIDE PS200 should be added to these fluids at a point where uniform mixing will occur. Add 122.5-5250 ppm of TOLCIDE PS200 to a freshly prepared fluid depending on severity of contamination.

TOLCIDE® is a registered trademark of Albright & Wilson UK Limited.

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NET CONTENTS: As Marked on Container